ings. He gives in each case a particular account of the mode of dissection, with a view to direct succeeding observers to obtain a distinct view of the parts he describes, and to verify the conclusions he has himself obtained.

He next notices a considerable modification in the structure of these organs which is presented in the Chiton. In this animal he finds a pair of simple lateral jaws, rather membranous than cartilaginous. Another variety of structure adapted for gorging food is met with in the *Patella mammillaris*, where there is simply a very muscular mouth and pharynx, but neither cartilage, tongue, nor hard part of any kind.

The apparatus by which the *Buccinum Lapillus* drills through shells in order to obtain its food, and the process it employs for that purpose, are next investigated; and that of the *Buccinum undatum* is particularly examined with the same view, the structure of the latter being very fully displayed.

The author hopes to be enabled to pursue these inquiries with respect to other tribes of Mollusca at some future period.

6. "On the Mammary Glands of the *Ornithorhynchus paradoxus*," by Richard Owen, Esq. Communicated by J. H. Green, Esq. F.R.S.

The author premises a history of the different opinions that have been entertained with respect to the anatomy and economy of this singular animal, which was first described and figured by Dr. Shaw in the year 1792. The name of Ornithorhynchus, which it at present bears, was given to it by Blumenbach; and some account of the structure of the head and beak was given in the Philosophical Transactions by Sir Everard Home in 1800; and in a subsequent paper he states his opinion that this animal differs considerably from the true mammalia in its mode of generation, an opinion which was adopted by Professor Geoffroy St. Hilaire, who accordingly placed it, together with the Echidna, in a separate order designated by the term *Monotrèmes*. He afterwards formed this group into a distinct class of animals, intermediate to mammalia, birds, and reptiles. Oken and De Blainville, on the other hand, condemned this separation; and maintained that the monotremata should be ranked among mammalia, and as being closely allied to the marsupialia; and hazarded the conjecture that they possessed mammary glands, which they expected would ere long be discovered. Professor Meckel has since described these glands as being largely developed in the female Ornithorhynchus. He considers this animal, however, in the mode of its generation, as making a still nearer approach to birds and reptiles, than the marsupial tribe. He was unable to inject these glands in consequence of the contracted state of the ducts arising from the action of the spirit in which the specimen was preserved, and from their being filled with a concrete matter. Geoffroy St. Hilaire, in a subsequent memior, persists in denying that these bodies possess the characters of mammary glands; but regards them as a collection, not of acini, but of cæca, having only two excretory orifices, and presenting no trace of nipples.

The author of the present memoir, having examined with great

care the specimens of the female Ornithorhynchus preserved in the Museum of the Royal College of Surgeons, found the structure to correspond very exactly with the account given by Meckel; and, moreover, succeeded in injecting the ducts of these glands with mercury. He further notices the differences of development occurring in five different specimens: the size of these glands having an obvious and direct relation to that of the ovaria and uteri. The gland itself is composed of from 150 to 200 elongated subcylindrical lobes, disposed in an oblong flattened mass, converging to a small oval areola in the abdominal integument, situated between three and four inches from the cloaca, and about one inch from the mesial line. It is situated on the interior of the panniculus carnosus, the fibres of which separate for the passage of the ducts to the areola; the orifices of these ducts are all of equal size, and occupy an oval space five lines in length by three in breadth; not elevated however in the slightest degree above the surrounding integument. An oily fluid may be expressed from the ducts by squeezing the gland.

A minute description is then given of the anatomical structure of the internal genito-urinary organs of the female Ornithorhynchus: from which it appears that if the animal be oviparous, its eggs must, from the narrow space through which they have to pass in order to get out of the pelvis, be smaller than those of a sparrow; and no provision appears to be made for the addition of albumen or of shell in the structure of that part of the canal through which they afterwards descend previous to their expulsion from the body. The ova are enveloped in a tough fibrous membrane in which the traces of vascularity, at least after being preserved in spirits, are not perceptible; whilst in birds the ova are attached by narrow pedicles, and are covered by a thin and highly vascular membrane.

From the whole of this inquiry, the author concludes that these glands are not adapted to the performance of any constant office in the economy of the individual, but relate to a temporary function. Their total absence, or at least their rudimentary condition, in the male, of which the author could perceive some traces in one specimen which he examined, and the greater analogy of their structure to a lacteal apparatus than to that of ordinary odoriferous glands, when taken in conjunction with the correspondence of their development to that of the uterine system, induce him to believe that they are to be regarded as real mammæ. This view is confirmed by the fact, noticed by Mr. Allan Cunningham, that the young of this animal readily takes cow's milk, and may be kept alive by this kind of sustenance.

7. "A Physiological Inquiry into the Uses of the Thymus Gland," by John Tuson, Esq. Communicated by J. C. Carpue, Esq. F.R.S.

The author is of opinion that the thymus gland is intended for two purposes: the one to serve as a receptacle of blood for supplying the chasm in the circulation occasioned by the great quantity sent to the lungs as soon as the function of respiration commences: the other to serve as a receptacle of osseous matter preparatory to the extensive ossification which is carried on in the early periods of growth.